A New Cell Type in Normal Human Epidermis?

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To the Editors:

We read with great interest the letter to the editor by Smolle and Kerl, published in the July 1991 issue of the Journal, entitled "Organization of the monocyte/macrophage system of normal human skin" [1]. The authors write that the finding of OKM5-positive epidermal cells (EC) in normal human skin, reported by Weber-Matthiesen and Sterry [2], confirms the finding of OKM5-positive EC they previously showed [3]. We agree absolutely with Smolle and Kerl [1], who underscored that the OKM5-positive EC should be considered a serious candidate to play a particular, though as-yet unknown, role within the context of the skin immune system [1], and also with Sterry and Weber-Matthiesen, who in their replay claim that the function of OKM5-positive EC still remains obscure.

On the other hand, immunohistologic investigations revealing OKM5-reactive, non-keratinocytic EC in normal skin have failed so far to homogeneously characterize and certainly identify the nature of such EC: OKM5-positive, OKM1-negative EC were hypothesized to be macrophages [3]; few basal OKM5-positive cells were shown as antigen-presenting cells (APC) [4]; OKM5-positive basal dendritic EC were described [5]; moderately dendritic OKM5-positive EC had the phenotype CD45-positive, CD45R-negative, HLA-DR-negative, HLA-DQ-negative, CD1a-negative [6]; OKM5-positive EC resembled ultrastructurally melanomacrophages and showed the phenotype CD45-negative, HLA-DR-negative, HMB45-negative [7]; OKM5-positive, moderately dendritic EC located within the basal layer or at the dermal-epidermal junction were CD68-negative, KiM8-negative, CD45-negative, HLA-DR-negative, and HLA-DQ-negative [2]; both occasional mononuclear cells and 5% Langerhans cells were OKM5 positive [8].

We therefore intended to precisely ascertain the exact nature of the OKM5-positive EC by recognizing their ultrastructural characteristics, using a sensitive immunoelectronmicroscopy (IEM) system. We provided evidence [9] that two OKM5-positive small subsets populate the normal human epidermis, namely, melanocytes (MC) and macrophage (MF)-like cells, whereas keratinocytes, Langerhans cells, and lymphocytes were OKM5 negative [9].

The significance of the OKM5-reactive MF-like EC in normal skin is unknown at present. One hypothesis is that OKM5-reactive MF-like EC in normal skin are able to induce down-regulatory immune responses, as well as other OKM5-reactive cells were demonstrated to do. In fact, OKM5-positive, OKM1-negative monocytes are capable of stimulating autologous T cells in the absence of antigen [10]; OKM5-positive, T6-negative, DR-positive EC, induced by certain wavelengths of UV irradiation, trigger autologous T-cell proliferation in the absence of antigen [11], activate suppressor-inducer T lymphocytes [12], and result in suppressor-effector T-lymphocyte activity [13]; OKM5-positive melanophages in chronic skin diseases may exert a down-modulatory influence on the inflammatory response [14]; and OKM5-positive APC in cutaneous T-cell lymphomas stimulate autologous CD4-positive lymphocytes [15].

In conclusion, although the functional role played by the OKM5-positive MF-like EC still has to be investigated and is a challenge for dermatoimmunologists, our recent investigation [9] provided evidence, by IEM, that an up-to-date undescribed EC type, showing macrophagic morphology, is harbored, together with keratinocytes, Langerhans cells, melanocytes, and lymphocytes, by the normal human epidermis.

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ANNOUNCEMENT

The 8th International Steglitz Paediatric Surgical Congress, "Endoscopical Surgery in Children," will be held December 4 and 5, 1992, in Berlin, Germany at the University Medical Centre Steglitz, Berlin. The Chairman is Prof. Dr. J. Waldschmidt. For information contact PD. Dr. F. Schier, Kinderchirurgie, Universitat-Klinikum Steglitz, Hindenburgdamm 30, 1000 Berlin 45, Tel (030) 798 4181 or 798 2909, Fax (030) 798 4141.

COURSE ANNOUNCEMENT

The course "Dermatology Update and All That Jazz" will be held April 22–24, 1992 at the Fairmont Hotel, New Orleans, Louisiana. The course is sponsored by Tulane University Medical Center, Office of Continuing Education & Dermatology Department. Coordinator: Larry E. Millikan, M.D. Credit: 17 Hours, Category 1. Cost: $325. Specialty: Dermatology. Contact The Office of Continuing Education, telephone number (504) 588-5466.